IN THE ABSTRACT

An optical torque sensor comprises a radiation source emitting radiation of at least one wavelength. At least one sensor senses the emitted radiation and generates at least one intensity signal indicative of the intensity of the emitted radiation. At least one signal conditioner is receptive of the emitted radiation and is positioned on a shaft between the radiation source and the at least one sensor thereby conditioning the emitted radiation. A circuit is receptive of the at least one intensity signal and determines the torque acting upon the shaft and compensates for the attenuation of the emitted radiation. ~~A method of compensating for signal attenuation in the sensor comprises generating radiation of at least one wavelength, conditioning the radiation and sensing the radiation. Responsive to the sensed radiation, at least one intensity signal indicative of the intensity of the radiation is generated. The intensity of the radiation due to a combination of the torque acting upon the shaft and the contamination of the sensor is determined. The intensity of the radiation due to the contamination of the sensor only is determined and the difference between the intensity of the radiation due to a combination of the torque acting upon the shaft and the contamination of the sensor and the intensity of the radiation due to the contamination of the sensor only is calculated to generate a compensated signal indicative only of the torque acting upon the shaft.~~